



The relation of body size to plasma levels of estrogens and androgens in premenopausal women (Maryland, United States)

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Journal: Cancer Causes Control 1995; 6(1):3-8

Abstract: We analyzed data from a cross-sectional study of 107 premenopausal women to evaluate the relations of height, weight, and body mass index (BMI) with plasma hormone levels. Participants were 20- to 40-year old women residing in Maryland (United States), whose reported menstrual cycle lengths were not more than 35 days and whose measured weights for height were 85 to 130 percent of 'desirable' based on 1983 Metropolitan Life Insurance tables. Fasting blood specimens were collected on each of days 5-7, 12-15, and 21-23 of every participant's menstrual cycle and pooled to create follicular, midcycle, and luteal phase samples, respectively, for analysis. Adjusted for age, taller women had significantly higher follicular-phase plasma-estradiol levels (percent difference/cm = 1.5, 95 percent confidence interval [CI] = 0.3-2.7, and heavier women had significantly lower plasma sex-hormone binding globulin (SHBG) levels averaged across the menstrual cycle phases (percent difference/kg = -1.2; CI = -1.9-(-0.6). Body weight within the range studied, however, was not related significantly to the concentration of SHBG-bound estradiol during any phase of the menstrual cycle. The results of this cross-sectional study suggest a possible mechanism by which height may influence breast cancer risk.